

## ABSTRACT OF THE DISCLOSURE

The present invention is provided for accurately estimating an amount of angular disagreement of planes of polarization between two polarization-maintaining optical fibers when connecting the polarization-maintaining optical fibers. In the present invention, a distribution of the polarization-maintaining optical fibers by irradiating a light on the lateral side of the polarization-maintaining optical fibers. The positions and heights of peaks of brightness of a transmitted light produced by the irradiated light are varied to comply with the angular disagreement of an axis of polarization which traverses two stress applying sections toward the irradiation direction of the light of each polarization-maintaining optical fiber. The amount of angular disagreement of the planes of polarization can be accurately estimated from the positions and heights of the peaks.